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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,533	12/11/2003	Blake C. Chenevert	EH-10965 (03-435)	7730

34704 7590 05/16/2006

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EXAMINER
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COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3749

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/733,533  
Filing Date: December 11, 2003  
Appellant(s): CHENEVERT ET AL.

**MAILED**  
**MAY 16 2006**  
**Group 3700**

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William B. Slate  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed February 16, 2006 appealing from the Office action mailed October 28, 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,333,742	TANCA	6-1982
5,277,153	KAKABAKER	1-1994
JP 2003-269887	HASHIGUCHI et al.	9-2003

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 12-16 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,277,153 to Kakabaker (“Kakabaker”) in view of U.S. Patent No. 4,333,742 to Tanca (“Tanca”) and Japanese Patent No. 2003-269887 (“Japanese patent ‘887”)

Kakabaker discloses in Figures 1-4 a method for cleaning a vessel of a fuel burning power plant or boiler similar to that described in applicant’s claims 12-16 and 18-23. In particular, Kakabaker describes a vessel that receives a soot blower device through an access opening (see col. 1, lines 14-20). The soot blower device includes an insertion portion (13) that is inserted into the vessel and forms a seal by means of a seal-bearing arrangement (41). The soot blowing devices includes a valve (16) that is opened to release superheated steam into the vessel, after-which the device is withdrawn from the conduit (see col. 6, line 53 through col. 7, line 5). Valve (16) is considered to be the second valve recited in applicant’s claims.

Art Unit: 3749

In regard to the recitation of a first valve, Kakabaker does not provided any detail as to a mechanism or valve with means for sealing off the soot blower from the vessel when the soot blower is withdrawn. However, the Japanese patent is cited to remedy the deficiency. The Japanese patent '887 shows a retractable soot blower in the same field of endeavor as Kakabaker. In the Japanese patent '887, a valve (3) is included between a vessel and the soot blower (see Fig. 1). This valve is termed an insertion latching valve (see computer translation paragraph [0049]) that functions to seal the soot blower from a vessel when the soot blower is retracted (see translation, paragraphs [0035] and [0052]). Alternatively, the masking door (35) meets the limitation of applicant's valve. This masking door (35) is further shown to be a pivoting type assembly. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Kakabaker to incorporate a valve as taught in the Japanese patent '887 to desirably seal off the soot blower from a vessel when the soot blower is retracted.

In regard to claim 16, OFFICIAL NOTICE was taken in a prior Office action (mailed 3/10/05) that valves being manually opened are well known in the art. The examiner stated that a person of ordinary skill in the art would reasonably select well known valve types for those disclosed in Kakabaker. This knowledge in the art of manual valve operation was not disputed by applicant and is now considered to be admitted prior art.

In regard to the limitations of the claims pertaining to timed opening of the valves, the examiner considers that the valves would be opened and closed as necessary to accomplish the purpose of cleaning the vessel. A person of ordinary skill in the art would select appropriate valve opening times through routine experimentation in order to optimize the cleaning process.

Art Unit: 3749

Therefore, the selection of an optimum time for opening the valve would be is not patentably distinct. See MPEP § 2144.05(II)(A).

Kakabaker discloses the use of superheated steam as the cleaning fluid, but possibly does not disclose the use of combustion gases as recited in applicant's claims.

Tanca teaches a soot blower in the same field of endeavor as Kakabaker. In Tanca, a soot blower employs combustion fuel gases for cleaning (see col. 1, line 57 through col. 2, line 8). Tanca also acknowledges that it is under stood in the art that combustion product/flue gases may also be used as the cleaning fluid (see col. 1, lines 23-27). These combustion fuel gases and combustible produce gases disclosed are considered to be the combustion gases, and fuel/oxidizer mixture claimed. Further, these combustion fuel gases would serve to "detonate" when ignited.

Therefore, in regard to claim 12-16 and 18-23, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of cleaning step of using superheated steam of Kakabaker to incorporate the step of using either combustion fuel gases or combustion product/flue gases as taught by Tanca as such gases are understood in the art to be satisfactory in dislodging built-up residue (see Tanca, col. 1, lines 23-27) and in the case of combustion fuel gases, desirably preserve the heating value of the fuel gas when the device is used in a coal gasifier (see Tanca, col. 3, lines 3-9).

**(10) Response to Argument**

Initial Comments

As noted above, appellant's claims 12-16 and 18-23 have been rejected on the basis of Kakabaker in view of Tanca and Japanese patent '887. During the course of prosecution a computer translation of the Japanese patent '887 was obtained and referenced to determine the disclosure of that patent. This computer translation was made of record on July 8, 2005. A formal translation of this Japanese patent has since been obtained from the Translation's Branch of the Science and Technical Information Center ("STIC") in March, 2006 and is made of record in association with this Examiner's Answer.<sup>1</sup> This translation is considered to supplement and verify the computer translation that was relied upon during the course of prosecution.

Appellant's arguments are now addressed with the following comments.

Response to appellant's brief section (b) The Basic Combination of References

Appellant broadly characterizes Kakabaker and the Japanese patent '877 as "complex differently structured devices" and that there is no showing why one of ordinary skill in the art would adopted features from one to the other. However, the examiner notes that all three references relied upon by the examiner in the rejection of the claims are termed "soot blowers" and are clearly in the same field of endeavor as one another. Each of the devices function to clean a vessel using a fluid in the same manner as applicant's invention and, accordingly, each is also considered to be in the same field of endeavor as applicant's invention. Further, the

Art Unit: 3749

examiner notes that rather than being so distinct in character as to be un-combinable, as asserted by appellant, the devices shown, in particular in Kakabaker and the Japanese patent '877, are similar in structure, operation, and purpose.

In Kakabaker, the lance (13) and carriage assembly (17) shown in detail in Fig. 2 are understood to be incorporated in the prior art soot blower assembly (11) shown in Fig. 1. This lance (13) and carriage assembly (17) are mounted within a conduit/frame (15) and operate to move within this conduit/frame (15) to be inserted and removed from an un-illustrated boiler or vessel to release steam for cleaning (see at least col. 6, lines 35-52 and col. 6, lines 53 through col. 7, line 5). The un-illustrated boiler or vessel would be located to the right of the frame (15) shown in Fig. 1 so that when the lance moves "rightwardly" the end of the lance would extend into the boiler or vessel (see col. 3, lines 14-16 and col. 6, lines 42-49).

Similarly, Fig. 1 of the Japanese patent '877 shows that an injection pipe/lance (5) is inserted in a conduit/connecting pipe (2) which is in turn attached to a vessel (1). The injection pipe advances "rightwardly" within the connecting pipe into the pressure vessel to release steam for cleaning (see paragraphs [0038] and [0039] of either translation). The resulting position of the injection pipe having its tip within the vessel to be cleaned is shown at the lower portion of Figure 2.

Therefore, do to the similarity in both structure and function between these two references, the examiner considers that a person of ordinary skill in the art would clearly regarded the references as combinable. The reasons for the combination have been articulated in the rejections of the claims noted above and are discussed further below.

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<sup>1</sup> This STIC translation of March 2006 is cited on a from PTO-892 and, along with form PTO-892 form, is attached



Appellant also argues that the function of the valve (16) of Kakabaker that operates to initially hold back steam does not properly transfer to the valve of the hypothetical combustion-operated device (see page 4 of applicant's arguments from the brief). The examiner does not agree.

The valve (16) of Kakabaker (illustrated in Fig. 1) functions to hold back and release steam and has been equated to the second valve of applicant claims (referenced in appellant's brief in the Summary of claimed subject matter section as valve 178 of Figs. 6 and 7). The examiner notes that this valve (16) of Kakabaker functions for the same purpose as both the valve (27) shown in schematic form in Fig. 1 of the Japanese Patent '887 and valve (29) of Tanca (see Fig. 1) in that they each provide for the release of cleaning fluid into the soot blower lance portion of each device. Though Kakabaker admittedly only discloses steam as the cleaning fluid, the examiner has pointed to the reference of Tanca to provide a teaching of the use of both flue gas (see Tanca, col. 1, lines 23-24) and combustible product fuel gas (see Tanca, col. 1, line 59) as the cleaning fluid in a soot blower assembly. There are no reasons identified by appellant why the valve (16) would not clearly function to hold back and release combustion gases once the cleaning fluid is modified as taught by Tanca.

Appellant also brief states in section (b) of the brief "that there is no teaching of why one of ordinary skill in the art would add yet another valve." However, the examiner notes that in this section appellant appears not to have addressed Japanese patent '887. It is this Japanese patent '887 that the examiner has relied upon to provide a teaching of an additional valve (i.e. the

recited first valve of appellant's claims). The motivation to provide such a valve has been identified in the Japanese patent '887, as noted above, and is further discussed below.

Response to appellant's brief section (c) The Valve Position of Claim 12

When Kakabaker is modified to incorporate the combustion gases of Tanca as the cleaning fluid (again note Tanca, col. 1, lines 23-25 and 59-60), the result would suggest passing these combustion gasses through the second valve (16) of Kakabaker. Appellant appears to suggest that the examiner is proposing modifying the valve (16) of Kakabaker to incorporate the valve of Tanca. However, the teaching of Tanca is provided to suggest modification of the type of cleaning fluid employed in Kakabaker (namely combustion gases) and not the valve itself.

Appellant's suggestion that combustion gases would not pass through the valve (16) of Kakabaker is not persuasive when considered in light of teachings of Tanca. As previously noted, the examiner considers that the suggestion in Tanca of employing combustion gases would result in such combustion gases being substituted for the steam of Kakabaker such that the combustion gases would pass through the valve (16) of Kakabaker.

Response to each of appellant's brief sections (d), (e), (f), and (g)

In these sections appellant disputes that the timing aspects of the valve operation recited in applicant's claims are obvious in view of the cited prior art. Appellant argues that the order of the valve opening would not be a matter of optimizing the order of the first and second valves as asserted by the examiner.

In response, the examiner notes that once Kakabaker is modified by the teachings of the Japanese patent '887 the result is a cleaning lance that includes a first valve (either insertion cutoff valve (3) or masking/shield door (35), see Fig. 1 of either translation)<sup>2</sup> and a second valve (16 of Kakabaker). Kakabaker explicitly states the following in regard to operation of the lance (13) and valve (16):

“Upon activation of the soot blower assembly, and typically shortly after the initial forward advancing movement of the lance 13, the steam valve 16 is opened so as to permit supply of high temperature steam into and through the feeding tube 12.”  
(Kakabaker, col. 6, lines 53-57).

The examiner considers that once Kakabaker is modified to include either the insertion cutoff valve (3) or masking/shield door (35) of the Japanese patent '887, this valve would be the first valve as recited in applicant's claims and would necessarily be opened before the cleaning fluid is released through valve (16). This opening of this first valve (again either valve (3) or door (35) of the Japanese patent '887) would necessarily occur first, so that the lance (13 of Kakabaker) may first be advanced into the vessel to be cleaned. Support for this assertion is also found in the Japanese patent '887, which provides that at least the insertion cutoff valve (3) is opened before the injection pipe (5) is inserted into the vessel (1) and before the cutoff valve (29) is opened to release steam into the injection pipe (5) (see either translation of Japanese patent '887, paragraph [0038]). Reference is also made to the lower portion of Figure 2 of the Japanese patent '887 which shows that when the injection pipe is operating, it extends through the insertion cut off valve (3) and shielding/masking door (35). Therefore, the examiner

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<sup>2</sup> Note that the STIC translation of March 2006 includes translation of text appearing in the Figures of the Japanese patent '887.

Art Unit: 3749

considers that the combination of Kakabaker and Japanese patent '887 suggests the valve opening order recited in applicant's claims.

The examiner's reliance on a theory of obviousness based on optimization through routine experimentation (citing to MPEP 2144.05(II)(A)) is considered to apply to primarily to applicant's claims 13 and 19-21 which recite limitations relating to the timing of the opening of the first valve and release of the cleaning fluid/charge after opening of the second valve. As the order of the opening of the valves is suggested in the prior art, the examiner maintains that the recited opening of the first valve "during an intermediate stage of said insertion" and introducing a fuel/oxidizer charge "with the second valve open" as recited in appellant's claims would be obvious to a skilled artisan and would be obtainable through routine experimentation of the openings of the valves to result in the desired cleaning. Support for this assertion is also found in the Japanese patent '887 which expressly notes that the timing of the steam injection is variable (see the table Figure 2 and either English translation paragraph [0043]).

Response to appellant's brief section (h) The Sealing of claim 12 and its Timing of Claim 15

Appellant argues that the prior art relied upon by the examiner does not suggest the sealing steps of appellant's claims 12 and 15. Appellant further argues that the examiner has asserted the "first valve" to be inherent in Kakabaker.

In response, the examiner notes that, as discussed above, the "first valve" has been asserted to be either the insertion cutoff valve (3) or the masking/shield door (35) present in the Japanese patent '887. The examiner has proposed modifying the Kakabaker reference to obtain this valve rather than then a reliance on the inherency of such a valve.

In regard to the claimed sealing steps, while the examiner did make note of the seal-bearing arrangement (41) in Kakabaker, the examiner also relied on the teachings of the Japanese patent '887 in providing a sealing arrangement between the vessel (1) and the injection pipe (5). The examiner considers that the outer conduit/frame (15) shown primarily in phantom lines in Fig. 1 of Kakabaker is analogous to the connection pipe (2) and seal box (4) of the Japanese patent '887. In each reference the injection pipe/lance moves back and forth within the conduit structures. Kakabaker provides substantial discussion as to the desirability of providing necessary seals around the steam conduit (12) in order to prevent undesirable leaking of the steam (see at least col. 7, lines 6-40). Further, Fig. 1 of Kakabaker appears to show that the conduit (12) would be sealed at its left end with respect to frame/conduit (15). The Japanese patent '887 clearly describes the housing (4) as a "seal box" and expressly provides that the injection pipe (5) is sealed once inserted into the seal box through the use of both packing material (6) (see either English translation, paragraphs [0025], [0026]) and ring-shaped bearing (7) (paragraph [0052]). Therefore, the examiner considers that the combination of references relied upon by the examiner clearly suggests that the conduit/frame (15) of Kakabaker would be sealed to the steam conduit (12) and/or the injection lance (13).

#### Response to appellant's brief section (i) The Conduit Assembly Steps of Claim 23

Appellant argues that there is no suggestion of the insertion and conduit assembly steps involving assembling conduit sections upstream of the second valve. Appellant further argues that the frame (15) of Kakabaker cannot be considered a conduit section. The examiner does not agree.

The examiner notes that the valve (16) of Kakabaker corresponds to the second valve of appellant's claims. As shown in Fig. 1 of Kakabaker, this valve (16) is clearly upstream of the insertion lance (13). Further, the examiner considers that at least the coupling/attachment of supply pipe (20) (see col. 3, lines 38-40) suggests attaching an upstream conduit section as recited in appellant's claim 23.

In regard to appellant's argument that the frame (15) of Kakabaker is not a conduit section, the examiner does not agree. Though Fig. 1 of Kakabaker shows this frame (15) in phantom, this figure suggests that the frame is an enclosed housing of the lance soot blower assembly (11). Further, as has been noted above, this frame (15) in Kakabaker is analogous to the connection pipe (2) of the Japanese patent '887 which is shown as an enclosed conduit section. The examiner considers that a person of ordinary skill in the art would reasonably regard the frame (15) to be the conduit section as recited.

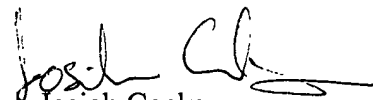
#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 3749

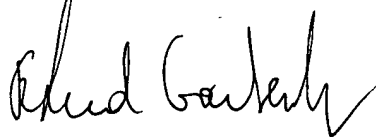
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

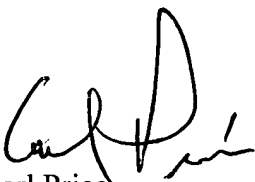


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